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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,798	03/22/2002	Kunimasa Kusumoto	2001_1831A	1108

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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT PAPER NUMBER

2652

DATE MAILED: 07/12/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/009,798

Applicant(s)

KUSUMOTO ET AL.

Examiner

Michael V Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3 and 6.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. Figure 11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

*Citation of Relevant Prior Art*

5. Kubo et al (US 6,301,212) discloses an optical disk drive having an optical pickup, servo error generation means, gain adjustment means, laser power switching means, command means, and storage means that holds first and second gain adjustment values and first and second offset adjustment values used when the emitted laser power is in first and second modes (Fig. 6). Ikeda (US 5,715,218) discloses a gain adjusting circuit that is controlled with a first value corresponding to normal operation and a second value corresponding to power saving operation (Fig. 11). Chiba (US 5,867,463) discloses a registering for storing gain information that differs according to whether a controller issues a write command or a read command (Fig. 5).

*Allowable Subject Matter*

6. Claims 1-9 are allowable over the prior art of record.

In regard to claim 1, none of the references of record alone or in combination disclose or suggest an optical disk drive comprising: an optical pickup for emitting a laser to an optical disk as a recording medium, and signal-processing a reflected light from the optical disk; a servo error signal generation means for generating a servo error signal of a focusing and tracking servo system from the reflected light; an offset detection means for detecting an offset which occurs in the servo error signal due to defocusing or detracking of an objective lens in the optical pickup, and obtaining an offset adjustment value for canceling the offset; an offset adjustment means for adding the offset adjustment value to the servo system to cancel the offset of the servo system which is detected by the offset detection means; a gain adjustment means for adjusting the gain of the servo system; a laser

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power switching means for changing the power of the laser emitted from the optical pickup; a command means for outputting an offset adjustment command, a gain adjustment command, and a laser power switching command to the offset adjustment means, the gain adjustment means, and the laser power adjustment means, respectively; a storage means for holding an offset adjustment value, a gain adjustment value, and a laser power, which are to be set in the offset adjustment means, the gain adjustment means, and the laser power adjustment means, respectively; and a driving means for receiving the servo error signal, and outputting a driving signal for controlling the optical pickup; wherein a first gain adjustment value and a first offset adjustment value to be set in the servo system are stored in the storage means, when the laser power emitted from the optical pickup is a first laser power; **said optical disk drive being characterized by that a second gain adjustment value to be set in the servo system when a second laser power is emitted from the optical pickup is obtained by arithmetic operation on the basis of the first gain adjustment value, the second gain adjustment value is set in the gain adjustment means, and a second offset adjustment value for canceling an offset which occurs in the servo system is obtained, and then, the second laser power, gain adjustment value, and offset adjustment value are stored in the storage means, and when the first laser power is switched to the second laser power during the actual operation, the switching of the laser power and the switching from the first gain adjustment value and offset adjustment value to the second gain adjustment value and offset adjustment value are carried out simultaneously.**

In regard to claim 4, none of the references of record alone or in combination disclose or suggest an optical disk drive comprising: an optical pickup for emitting a laser to an optical disk as a recording medium, and signal-processing a reflected light from the

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optical disk; a servo error signal generation means for generating a servo error signal of a focusing and tracking servo system from the reflected light; an offset detection means for detecting an offset which occurs in the servo error signal due to defocusing or detracking of an objective lens in the optical pickup, and obtaining an offset adjustment value for canceling the offset; an offset adjustment means for adding the offset adjustment value to the servo system to cancel the offset of the servo system which is detected by the offset detection means; a gain adjustment means for adjusting the gain of the servo system; a laser power switching means for changing the power of the laser emitted from the optical pickup; a command means for outputting an offset adjustment command, a gain adjustment command, and a laser power switching command to the offset adjustment means, the gain adjustment means, and the laser power switching means, respectively; a storage means for holding an offset adjustment value, a gain adjustment value, and a laser power, which are to be set in the offset adjustment means, the gain adjustment means, and the laser power switching means, respectively; and a driving means for receiving the servo error signal, and outputting a driving signal for controlling the optical pickup; wherein a first gain adjustment value and a first offset adjustment value to be set in the servo system are stored in a first storage area provided in the storage means, when the laser power emitted from the optical pickup is a first laser power; said optical disk drive being characterized by that, after the first gain adjustment value and offset adjustment value obtained by the adjustment operation are stored in the first storage area, **the command means outputs a command for turning off the laser output from the optical pickup to the laser power switching means and, after the laser output is turned off, second to m-th (m: integer not less than 2) gain adjustment values to be set in the servo system when second to m-th laser powers are emitted from the optical**

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pickup are obtained by arithmetic operation based on the first gain adjustment value, and the second to m-th gain adjustment values are set in the gain adjustment means, and then, second to m-th offset adjustment values for canceling offsets that occur in the servo system are obtained, and the second to m-th laser powers, gain adjustment values, and offset adjustment values are stored in second to m-th storage areas provided in the storage means, respectively, and during the actual operation, when the laser power is switched from the first laser power to an n-th (n: integer not less than 2 and not larger than m) laser power among the second to m-th laser powers, the switching of the laser power and the switching of the first gain adjustment value and offset adjustment value to the nth gain adjustment value and offset adjustment value are carried out simultaneously.

In regard to claim 7, none of the references of record alone or in combination disclose or suggest optical disk drive comprising: an optical pickup for emitting a laser to an optical disk as a recording medium, and signal-processing a reflected light from the optical disk; a tracking error signal generation means for generating a tracking error signal of a tracking servo from the reflected light; an offset detection means for detecting an offset which occurs in the tracking error signal due to detacking of an objective lens in the optical pickup or deviation of the optical axis of a photodetector, and obtaining an offset adjustment value for canceling the offset; first and second offset adjustment means for adding two offset adjustment values to the tracking error signal to cancel the offset of the tracking error signal which is detected by the offset detection means; a gain adjustment means for adjusting the gain of the tracking servo; a laser power switching means for changing the power of the laser emitted from the optical pickup; a command means for outputting an offset adjustment command, a gain adjustment command, and a laser power

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switching command to the first and second offset adjustment means, the gain adjustment means, and the laser power switching means, respectively; a storage means for holding two offset adjustment values, a gain adjustment value, and a laser power, which are to be set in the first and second offset adjustment means, the gain adjustment means, and the laser power switching means, respectively; and a driving means for receiving the tracking error signal, and outputting a driving signal for controlling the optical pickup; wherein the offset adjustment and gain adjustment of the tracking servo are carried out after the focusing is turned on in the state where a first laser power is set in the laser power switching means, and the first offset adjustment value, gain adjustment value, and laser power which are set by the above described adjustments are stored as first adjustment values in a first storage area provided in the storage means; said optical disk drive being characterized by that, after the first adjustment values obtained by the adjustment operation are stored in the first storage area, **the command means outputs a command for turning off the laser output to the laser power switching means and, after the laser output is turned off, second to m-th gain adjustment values to be set in the servo system when second to m-th (m: integer not less than 2) laser powers are emitted from the optical pickup are obtained by arithmetic operation based on the first gain adjustment value, and the second to m-th gain adjustment values are set in the gain adjustment means, and then, second to m-th offset adjustment values for canceling offsets that occur in the servo system are obtained, and the second to m-th laser powers, gain adjustment values, and offset adjustment values are stored in second to m-th storage areas provided in the storage means, respectively, and during the actual operation, when the laser power is switched from the first laser power to an n-th laser power among the second to m-th laser powers, the first offset adjustment value and the n-th**



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offset adjustment value are set in the first offset adjustment means and the second offset adjustment means, respectively, simultaneously with the switching of the laser power from the first laser power to the n-th laser power.

### *Conclusion*

7. This application is in condition for allowance except for the formal matters noted above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

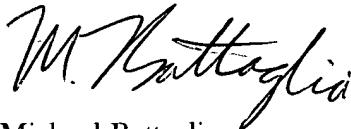
A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

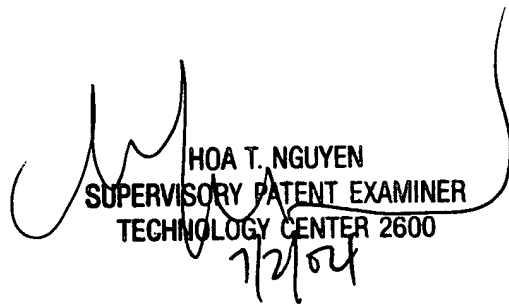
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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1/2/04